



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/749,071

12/30/2003

Jennifer Dean

145581-1

7947

43248

7590

05/03/2007

CANTOR COLBURN LLP - GE PLASTICS - SMITH  
55 GRIFFIN RD SOUTH  
BLOOMFIELD, CT 06002

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT

PAPER NUMBER

1732

MAIL DATE

DELIVERY MODE

05/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/749,071

Applicant(s)

DEAN ET AL.

Examiner

Jeff Wollschlager

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-15 and 17-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 15, 2007 has been entered.

### ***Response to Amendment***

Applicant's amendment to the claims filed February 15, 2007 has been entered. Claims 2 and 16 have been canceled. Claims 1, 17 and 21 are currently amended. Claims 1, 3-6, 8-15 and 17-21 are pending and under examination.

### ***Claim Objections***

Claim 12 is objected to because of the following informalities: In line 3, the first recitation of "propylene" is misspelled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is indefinite because it does not further limit the claim from which it depends. For example, claim 6 recites "polycarbonate" and

Art Unit: 1732

"(co)polyestercarbonate". Claim 19 depends from claim 16, which has been canceled.

The claim is understood to depend from claim 21, as this appears to be applicant's intention in view of the prosecution history.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 11, and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawada et al. (U.S. 2002/0045027).

Regarding claims 1 and 17-21, Sawada et al. teach a method of making an anti-fog resin sheet and an anti-fog molded article from the resin sheet (Abstract). The anti-fog agent employed by Sawada et al. is combined/blended with a substrate, such as polycarbonate, styrene based resins, and polyethylene terephthalate to form the anti-fog resin sheet (paragraph [0039]) and is then further molded to produce a molded article (paragraph [0079]). The anti-fog agent disclosed by Sawada et al. comprises a nonionic surfactant and a metal salt/ionic material (Abstract). After producing the molded article, Sawada et al. contact the molded article with water (paragraph [0117]).

The examiner recognizes that Sawada et al. does not disclose the claimed effect of contacting the molded article with water (e.g. improved fog resistant). However, the examiner notes that Sawada et al. perform the same claimed steps with the same

Art Unit: 1732

claimed materials under the same claimed conditions. Therefore, it follows that the same claimed effects and physical properties would necessarily be achieved by the steps disclosed by Sawada et al.

As to claims 3 and 4, Sawada et al. expose the molded article to water for 30 minutes (paragraph [0117]).

As to claim 11, Sawada et al. disclose the nonionic surfactant is used within a range from 0.1 to 15% (paragraph [0073]).

Claims 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hen et al. (WO 96/25451).

Regarding claims 19 and 21, Hen et al. disclose a method of producing an anti-fog article wherein thermoplastic polymers such as PET and other polymers (page 7, lines 13-24) are combined with polyether polyamides (i.e. non-ionic anti-fog additive) and molded/shaped to produce an article (page 7, lines 20-24; page 8, lines 10-15). Upon forming the article, the article is exposed to water to improve the anti-fog behavior (page 8, lines 16-20; Abstract).

Claims 1, 3-6, 8-12 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by LaCasse et al (U.S. 5,877,254).

Regarding claims 1 and 17-21, LaCasse et al. disclose a method of producing an anti-fog composition comprising ionic or nonionic anti-fog additives (col. 4, lines 42-61), for aromatic thermoplastic articles, such as polycarbonate and polyethylene

Art Unit: 1732

terephthalate, and for various polyolefins (col. 3, lines 48-57), wherein the composition may be coated/blended with the thermoplastic material and further processed and molded (col. 3, lines 48-52) to produce a finished article (Abstract).

The examiner notes that in a reasonable interpretation of the claim, LaCasse et al. meet the blending and molding limitations recited as set forth above. The examiner points to dependent claim 15 as further evidence to support this interpretation of the claim.

Further, LaCasse et al. disclose soaking the produced article in water and exposing to a mist of water (Examples 1, 2 and 5). The examiner notes that LaCasse et al. perform the same claimed steps with the same claimed materials in the same claimed manner. As such the same claimed effects (i.e. improved fog resistance) and physical properties are necessarily realized.

As to claims 3 and 4, LaCasse et al. disclose exposure for extended periods of time (Examples 1, 2 and 5).

As to claims 5 and 6, LaCasse et al. disclose PET and polycarbonate (col. 3, lines 52-58).

As to claim 8, LaCasse et al. disclose the ionic anti-fog additive is a sulfonic acid salt (col. 5, lines 6-10).

As to claims 9 and 10, LaCasse et al. disclose the claimed sulfonic acid salts (col. 5, lines 11-30; col. 6, lines 39-53).

Art Unit: 1732

As to claim 11, LaCasse et al. disclose the surfactant may be used in concentrations of about 10% to about 40% of total solids of the composition (col. 6, lines 28-31; col. 7, lines 1-17).

As to claim 12, LaCasse et al. disclose polyethylene glycol, polyethylene glycol/polypropylene copolymers, and mixtures thereof (col. 3, lines 43-45).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada et al. (U.S. 2002/0045027), as applied to claims 1, 3, 4, 11 and 17-21, in view of Schirmer et al. (U.S. 3,891,719).

As to claims 5 and 6, Sawada et al. disclose polycarbonate, but do not clearly express the polycarbonate is aromatic. However, as is well known in the art, and disclosed by Schirmer et al. (col. 2, lines 40-65), polycarbonates are conventionally produced from aromatic raw materials, such as, for example, bisphenol A.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a conventional commercial grade polycarbonate, such as an aromatic polycarbonate, as the polycarbonate in Sawada et al.'s method, for the purpose, as suggested by Schirmer et al. and as is

Art Unit: 1732

known in the art, of employing a readily available conventional form of the commercial grade material known to produce acceptable results.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hen et al. (WO 96/25451), as applied to claims 19 and 21 above.

As to claim 11, Hen et al. teach the method of claim 21 as set forth above. Hen et al. do not expressly disclose the claimed weight fractions. However, Hen et al. disclose that the product is made "at least in part" of the polyether polyamide anti-fog material and that the final product may take various forms and employ various other plastics (page 7, lines 13-24; page 8 lines 4-20) and that such selection factors depend on the article to be manufactured.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have readily optimized the amount of polyether polyamide employed in the process disclosed by Hen et al. for the purpose of producing a desired product.

Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hen et al. (WO 96/25451) in view of Nishizawa et al. (U.S. 6,797,383).

Regarding claims 17 and 20, Hen et al. disclose a method of producing an anti-fog article wherein thermoplastic polymers (page 7, lines 13-24) are combined/blended with polyether polyamides (i.e. non-ionic anti-fog additive) and molded/shaped to produce an article (page 7, lines 20-24; page 8, lines 10-15). Upon forming the article,



Art Unit: 1732

exemplified as a film or multilayered film structure (page 7, lines 4-7) the article is exposed to water to improve the anti-fog behavior (page 8, lines 16-20; Abstract). Hen et al. further disclose that products such as goggles may be formed with the anti-fog additive disclosed (page 8, lines 4-20). Hen et al. do not disclose polycarbonate.

However, Nishizawa et al. disclose employment of polycarbonate in a multilayered laminate to produce goggles with excellent impact resistance (col. 1, lines 10-25).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed polycarbonate with the intrinsic anti-fog material disclosed by Hen et al. to practice the method disclosed by Hen et al. for the purpose, as suggested by Nishizawa of producing goggles with excellent impact resistance while realizing the improved anti-fog properties disclosed by Hen.

Claims 1, 3-6, 8-12, 15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaCasse et al. (U.S. 5,877,254) in view of Sacks et al. (U.S. 3,048,263) and any of Parthasarathy et al. (U.S. 6,225,391) or Smissen (U.S. 3,433,653) or Hen et al. (WO 96/25451).

Regarding claims 1 and 17-21, as set forth in the 102(b) rejection above, LaCasse et al. disclose a method of producing an anti-fog composition comprising ionic or nonionic anti-fog additives (col. 4, lines 42-61), for aromatic thermoplastic articles, such as polycarbonate and polyethylene terephthalate, and for various polyolefins (col.

Art Unit: 1732

3, lines 48-57), wherein the composition may be coated/blended with the thermoplastic material and further processed and molded (col. 3, lines 48-52) to produce a finished article (Abstract).

In an alternative interpretation of the claim, LaCasse et al. do not form a blend, narrowly construed, of raw material aromatic thermoplastic polymer and an ionic anti-fog additive. Further, in an alternative interpretation, LaCasse et al. do not perform a narrowly construed exposing step, such as exposing to steam.

However, Sacks et al. disclose that in applications utilizing anti-fog agents in plastic films that both coating and incorporating methods are known for bringing the anti-fog agent and plastic together, and that incorporating the anti-fog additive with the plastic is the preferred method (col. 3, lines 18-47). Additionally, each of Parthasarathy et al. (col. 6, lines 66-col. 7, lines 10), Smissen (Abstract; col. 1, lines 47-50 and 57-63) and Hen (page 4, lines 23-25; page 8, lines 16-20) disclose conditioning plastics containing anti-fog agents by exposing them to water to enhance and activate their performance by hydrolyzing the anti-fog additive.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have incorporated the anti-fog agents disclosed by LaCasse et al. into the polymeric materials disclosed by LaCasse et al., as suggested by Sacks et al. for the purpose, as suggested by Sacks et al., of reducing additional processing steps and to realize a longer lasting fog resistant product than is achievable from merely coating the agent on the surface of the plastic (col. 3, lines 18-46).

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have performed a conditioning step to enhance and activate the fog resistant agents as suggested individually by each of Parthasarathy, Smissen and Hen et al. to provide a high quality material fully ready for its final application prior to being put into service.

The examiner notes that one having ordinary skill would have had a reasonable expectation of success when performing the incorporating and conditioning/activation steps with the plastics disclosed by LaCasse et al. since i) LaCasse et al. disclose polyolefin films, PET films and polycarbonate films as equivalent alternatives and ii) one having ordinary skill would have realized the properties of the anti-fogging agents themselves (e.g. hydrophilicity) exist, to a large degree, independently, of the polymers employed and iii) Parthasarathy (col. 6, lines 37-52) and Hen (page 7, lines 13-23; page 8, lines 4-20) each suggest various polymer compositions are applicable for use with their methods.

As to claims 3 and 4, LaCasse et al. disclose exposure for extended periods of time (Examples 1, 2 and 5). Further, Parthasarathy disclose the activation depends on time, temperature and relative humidity (col. 7, lines 12-18) .

As to claims 5 and 6, LaCasse et al. disclose PET and polycarbonate (col. 3, lines 52-58).

As to claim 8, LaCasse et al. disclose the ionic anti-fog additive is a sulfonic acid salt (col. 5, lines 6-10).

Art Unit: 1732

As to claims 9 and 10, LaCasse et al. disclose the claimed sulfonic acid salts (col. 5, lines 11-30; col. 6, lines 39-53).

As to claim 11, LaCasse et al. disclose the surfactant may be used in concentrations of about 10% to about 40% of total solids of the composition (col. 6, lines 28-31; col. 7, lines 1-17).

As to claim 12, LaCasse et al. disclose polyethylene glycol, polyethylene glycol/polypropylene copolymers, and mixtures thereof (col. 3, lines 43-45).

As to claim 15, Sacks et al. describe incorporating the additive instead of employing it as a coating (col. 3, lines 18-47).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being obvious over LaCasse et al (U.S. 5,877,254), as applied to claims 1, 3-6, 8-12 and 17-21 above, in view of Tu et al. (U.S. 3,933,407).

As to claims 13 and 14, LaCasse et al. teach the method of claim 12 as set forth above. LaCasse et al. do not disclose the anti-fog additive as claimed. However, Tu et al. disclose antifogging additives meeting the claimed limitations (col. 4, line 12-col. 8, line 7; particularly note: col. 4, lines 12-54; col. 7, lines 1-57 and even further combined with other crosslinking materials such as ethylene glycol, divinyl ether (col. 7, lines 59-65).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the anti-fog agent disclosed by Tu et al. in the method disclosed by LaCasse et al. since Tu et al. suggest

Art Unit: 1732

the material is an alternative means of accomplishing fog resistance with synergistic effects (Abstract).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaCasse et al. (U.S. 5,877,254) in view of Sacks et al. (U.S. 3,048,263) and any of Parthasarathy et al. (U.S. 6,225,391) or Smissen (U.S. 3,43,653) or Hen et al. (WO 96/25451) as applied to claims 1, 3-6, 8-12, 15 and 17-21 above, in view of Tu et al. (U.S. 3,933,407).

As to claims 13 and 14, LaCasse et al. teach the method of claim 12 as set forth above. LaCasse et al. do not disclose the anti-fog additive as claimed. However, Tu et al. disclose antifogging additives meeting the claimed limitations (broadly: col. 4, line 12- col. 8, line 7; particularly note: col. 4, lines 12-54; col. 7, lines 1-57 and even further combined with other crosslinking materials such as ethylene glycol, divinyl ether (col. 7, lines 59-65).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the anti-fog agent disclosed by Tu et al. in the method disclosed by LaCasse et al. since Tu et al. suggest the material is an alternative means of accomplishing fog resistance with synergistic effects (Abstract).

***Response to Arguments***

Applicant's arguments filed February 15, 2007 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/749,071

Page 14

Art Unit: 1732

JW

Jeff Wollschlager  
Examiner  
Art Unit 1732

April 24, 2007

u  
CHRISTINA JOHNSON  
SUPERVISORY PATENT EXAMINER

4/30/07